

PALEONTOLOGY AND GEOLOGY OF THE BADWATER  
CREEK AREA, CENTRAL WYOMINGPart 3. Late Eocene Apatemyidae (Mammalia; Insectivora)  
from the Badwater Area

PETER ROBINSON

University of Colorado Museum

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The Family Apatemyidae has a widespread distribution in North America from the middle Paleocene to middle Oligocene. Numerically the specimens of *Apatemys* are never abundant even though the family is usually represented in all well sampled faunas. This is true of the Badwater collections; indeed *Apatemys* is less abundant than the multituberculates whose last recorded occurrence is in the Badwater faunas (Sloan, 1966).

The following abbreviations are used: CM, Carnegie Museum; LACM-CIT, Los Angeles County Museum, California Institute of Technology; UCM, University of Colorado Museum; M (with sub- or superscript), molar; P, premolar; L, length; W, width; tr., trigonid; tal., talonid.

## SYSTEMATIC REVIEW

Order Insectivora, *incertae sedis*

Family APATEMYIDAE

Genus *Apatemys* Marsh 1872

Two species of *Apatemys* are found at Badwater; both are also present in the Green River Formation collections of the Carnegie Museum. These species are differentiated on a size basis only as the morphology of the teeth is variable within any size grouping, particularly in the development of the anterolingual cusp (paraconid, according to Gazin 1958, but I question the homology) of  $M_1$ . This cusp may be completely absent or very small. The morphology of the trigonids on  $M_{2-3}$  is not greatly different from that of  $M_1$  and I suspect that the prominent large anterior cusp of  $M_1$  may be the paraconid. In specimens with well developed trigonids, such as the type of *Apatemys downsi*, LACM-CIT 5202, one can develop an argument for either of the anterior cusps

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being the paraconid. Many of the teeth from Badwater not only have poor development of the anterolingual cusp in  $M_1$  but equally poor development of the anterobuccal cusp in  $M_2$ . As the sample is so small the best criteria for species separation seems to be size.

*Apatemys hendryi*<sup>1</sup>, new species

Figure 1

TYPE: CM 15737, left  $M_3$ , from locality 5A.

REFERRED MATERIAL:  $M_1$ , UCM 26458, UCM 23156;  $M_2$ , UCM 26026;  $M_3$ , Type and CM 15744, CM 15639, all from locality 5A, and CM 13313,  $M_1$  from the Green River formation of Utah.

KNOWN STRATIGRAPHIC AND GEOGRAPHIC RANGE: Lower Bridgerian of Powder Wash, Green River Formation, NE Utah and Uintan (?) of the Hendry Ranch Member, Tepee Trail Formation, Wind River Basin, Wyoming.

DIAGNOSIS: Approximately three-fourths the size of *Apatemys bellulus*, Marsh.

DISCUSSION: Study of the measurements of *Apatemys* shows that the maximum width of the lower molars varies from trigonid to talonid on different teeth. Gazin's (1958:89) listing of the maximum tooth widths, therefore, does not distinguish which part of the tooth was actually wider. As some of the width differences are sizable, study of a significantly large sample of *Apatemys* might allow for greater precision in species recognition if relative trigonid-talonid widths are accounted for. It is unfortunate that we do not have any jaw material of *Apatemys* from the Badwater localities, as such material would offer some insight into the relationships. However, one can assume that the jaws when found will be similar to other *Apatemys* jaws and will be disproportionately deep.

The recognition of such a small *Apatemys* as *A. hendryi* is certainly due to the method of collection of both the Green River and Badwater faunas. I doubt if isolated teeth of such a small animal would ever be found by normal collecting methods.

*Apatemys* sp. cf. *A. bellus* Marsh 1872

REFERRED MATERIAL:  $M_1$ , CM 15679;  $M_2$ , CM 15021, UCM 28354 (trigonid only).

LOCALITIES: CM 15679, CM 15021, both from locality 5-front, UCM 28354 from locality 5A.

<sup>1</sup> Named in honor of James Hendry of Lost Cabin, Wyoming, in appreciation for his kindnesses to the several field parties that have worked on his ranch.

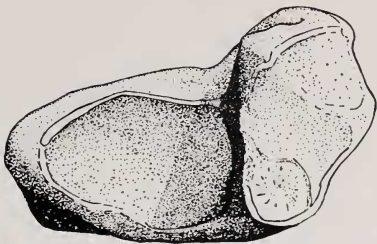


Figure 1. Crown view of LM<sub>3</sub>, *Apatemys hendryi*, type, CM 15737, x 66; light from upper right.

DISCUSSION: Very little can be added to Gazin's recent (1958) review of this species except to note that the trigonid cusps of the molars of *Apatemys* sp. cf. *A. bellus* are usually more distinct than those of *A. hendryi*.

The lack of the smaller *Apatemys* at locality 5-front may be significant as the rarer large species is present here. Even though the total sample of *Apatemys* is small, the total sample of teeth is large and the probability of missing *A. hendryi* at locality 5-front would be slight.

MEASUREMENTS IN MILLIMETERS OF *Apatemys*  
TEETH FROM UTAH AND WYOMING

Specimen	M <sub>1</sub>			M <sub>2</sub>			M <sub>3</sub>			Locality
	W tr.	W tal.	L	W tr.	W tal.	L	W tr.	W tal.	L	
UCM 23156	0.83	0.94	1.48	—	—	—	—	—	—	5A
UCM 26458	0.80	1.05	1.72	—	—	—	—	—	—	5A
CM 13313	0.70	0.94	1.35	—	—	—	—	—	—	Powder Wash
UCM 26026	—	—	—	0.92	0.92	1.47	—	—	—	5A
UCM 28354	—	—	—	1.47	—	—	—	—	—	5A
CM 15021	—	—	—	1.54	1.19	2.45	—	—	—	5-front
CM 15679	1.05	1.33	1.72	—	—	—	—	—	—	5-front
CM 15737*	—	—	—	—	—	—	0.88	0.74	1.50	5A
CM 15744	—	—	—	—	—	—	0.87	0.95	1.73	5A
CM 15639	—	—	—	—	—	—	0.95	0.75	1.51	5A

\* Type *A. hendryi*

*Apatemys* sp.

A single upper molar of *Apatemys*, CM 15740, from locality 5A, has been recovered. The upper dentition of *Apatemys* has only recently been figured (McKenna, 1963) and the middle Eocene (Bridger and Green River formation samples) have yet to be studied. Species assign-

ment might be made here on a size basis as with the lower teeth, but as the lower teeth are so variable, the uppers probably are variable as well. I therefore do not assign this tooth to a species; it is generally small and is probably not in the size range of *A. rodens* or *A. downsi*.

#### ACKNOWLEDGEMENTS

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